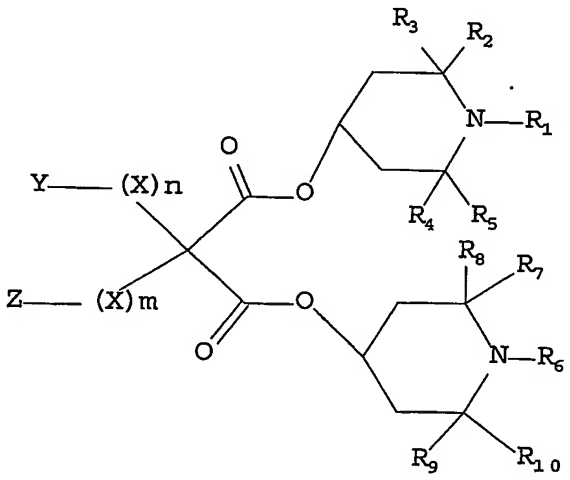
Ink-Jet Recording Material

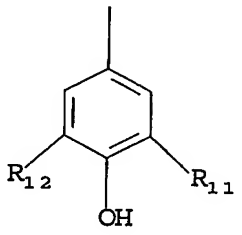
CLAIMS.

1. Ink-jet recording material having at least an ink-receiving layer comprising alumina particles, a binder resin, boric acid or borate and a color fading inhibitor compound of the following Formula I:



Formula I

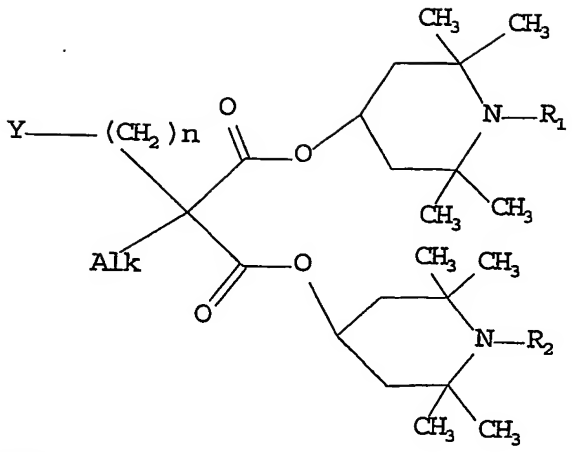
wherein R_1 to R_{10}, being the same or different, each are an alkyl group having from 1 to 5 carbon atoms; X is a divalent linking group; m and n, equal or different, are 0, 1 or 2; Z is Y or is an alkyl group having from 1 to 12 carbon atoms, and Y is represented by formula II,



Formula II

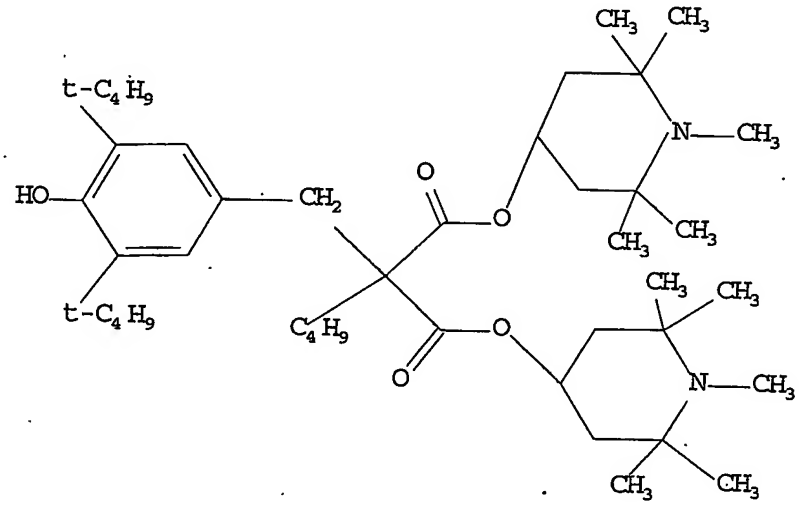
wherein R_{11} and R_{12} each being an alkyl group having from 1 to 6 carbon atoms, said ink-jet recording material being substantially free of thiocyanate compounds.

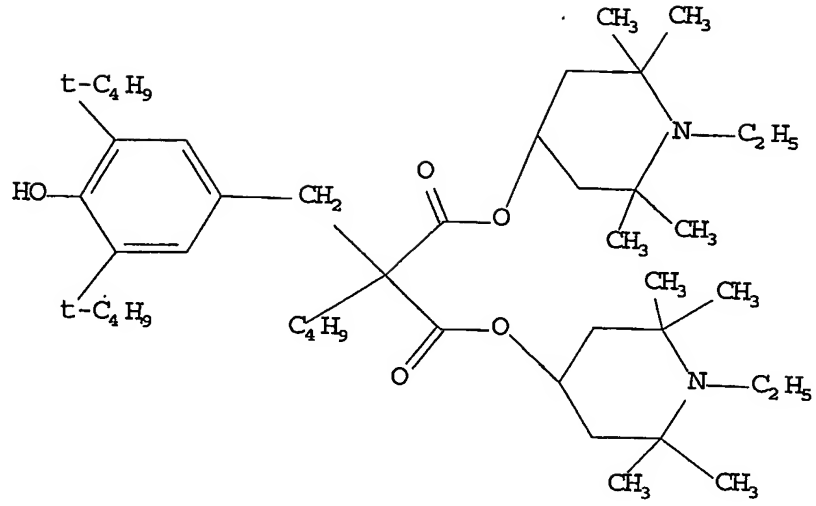
2. Ink-jet recording material according to claim 1, wherein the color fading inhibitor compound is represented by formula:

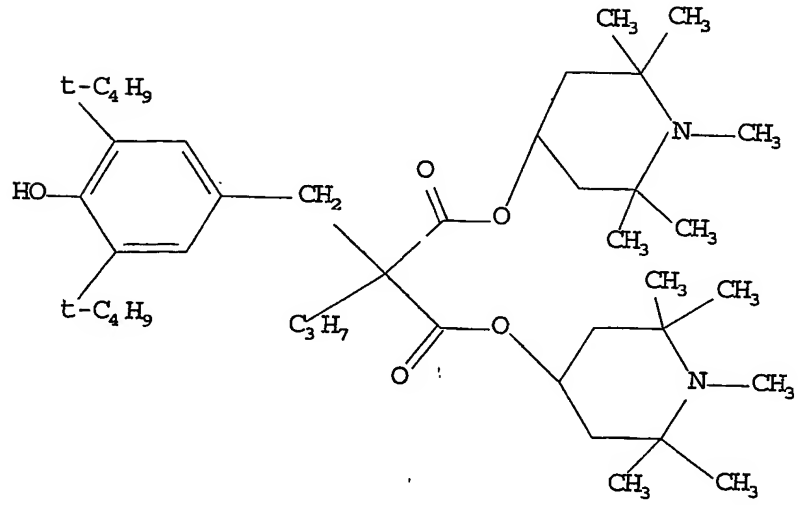


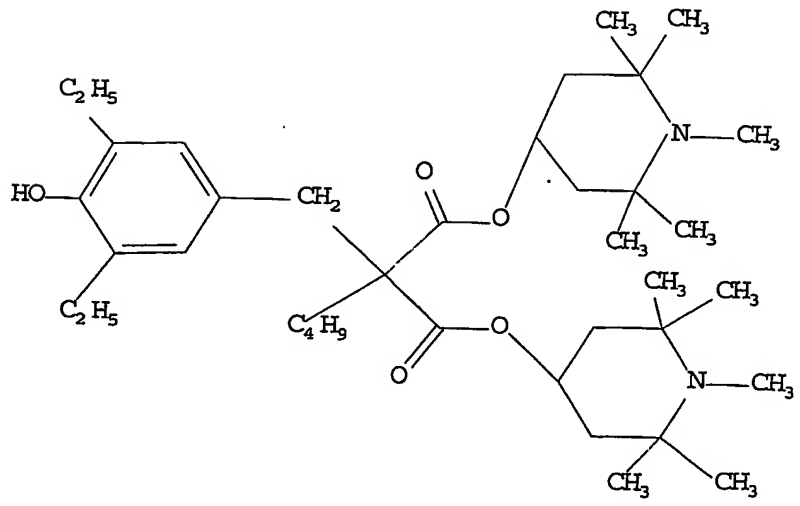
wherein, Y, R_1 and R_2 are as above and Alk is an alkyl group having from 1 to 12 carbon atoms.

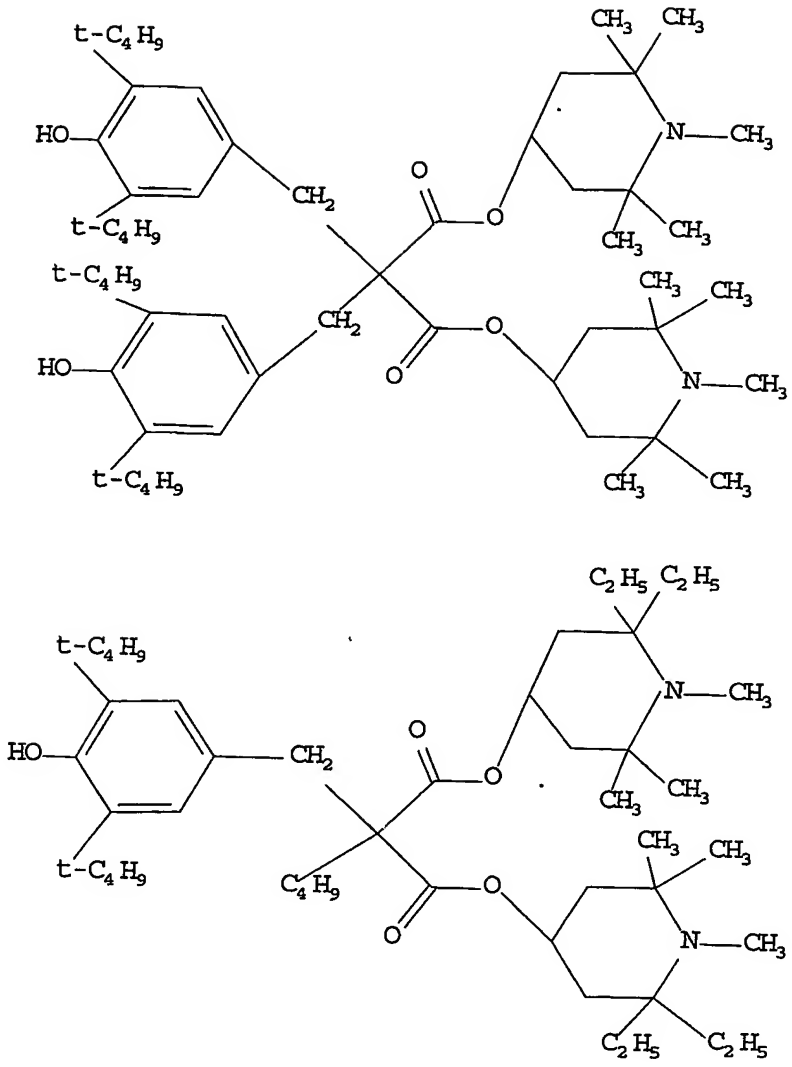
3. Ink-jet recording material according to claim 1, wherein the color fading inhibitor compound is represented by formulas:











4. An ink-jet recording material according to claim 1, wherein the amount of said color fading inhibitor compound is preferably from 0.5 to 15 weight %, respect to the amount of alumina particles present in the ink-jet receiving layer.

5. An ink-jet recording material according to claim 1, wherein the alumina particles are alumina hydrate.

6. An ink-jet recording material according to claim 5, wherein the alumina hydrate has a boehmite or pseudo-boehmite structure of formula $Al_2O_3.nH_2O$, wherein n is a number from 1.0 to 2.0.

7. An ink-jet recording material according to claim 1, wherein the average particle diameter of the alumina particles is in the range from 10 to 200 nm.

8. An ink-jet recording material according to claim 1, wherein the average pore radius of the alumina particles is in the range from 2 to 100 nm.

9. An ink-jet recording material according to claim 1, wherein the alumina particles have a pore radius maximum within a range of from 9 to 12 nm in a pore radius distribution of the fine powder material and a total volume of pores having radii not exceeding 5 nm is not more than 10 % of a volume of all pores of the fine powder material.

10. An ink-jet recording material according to claim 1, wherein the binder resin is a polyvinyl alcohol.

11. An ink-jet recording material according to claim 10, wherein the polyvinyl alcohol has a saponification degree lower than 90%.

12. An ink-jet recording material according to claim 10, wherein the polyvinyl alcohol has a polymerization degree lower than 1500.

13. An ink-jet recording material according to claim 1, wherein soluble salts of boric acids are used.

14. An ink-jet recording medium according to claim 1, wherein said ink-receiving layer additionally comprises at least one surfactant.

15. Use of an ink-jet recording material substantially free of thiocyanate compounds as described in claim 1 to 14 to improve the gas resistance of images recorded on it.

16. An ink-jet recording microporous material showing an optical density average lost percentage lower than 20% after 24 weeks of exposition to air atmosphere under 2 Klux intensity fluorescent light exposure, at 50% relative humidity, and at 23°C.